<u>ABSTRACT</u>

A method and apparatus for determining a circuit path between a source node and a destination node within a network comprising a plurality of nodes by iteratively selecting appropriate next nodes using a shortest path algorithm and accepting or rejecting the selected next node based upon the bandwidth utilization level of the communications link to the next node. In the case of a lack of acceptable communication links or a determined circuit path exceeding an ideal circuit path by a predetermined amount, the threshold levels defining acceptable links are adjusted.